

FACTS TO THE LANDSCAPE HISTORY OF THE ÖREG-BAKONY MOUNTAINS

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In the past, Hungarian land use and the landscape itself, was much more colourful and diverse than it is today. Processes and effects resulting in the current state of landscapes are explored during landscape history studies of certain areas. These changes are being examined in the once vast, dense forests covering the Carpathian Basin. These forests have been significantly reduced due to habitat alteration, and their view has changed due to shifting land use. One of the largest forested areas in Hungary is the Bakony Mountains, but its coverage has also decreased significantly during the past 500–1000 years in tandem with traditional agriculture and forestry, which are slowly disappearing as production becomes intensive. Traditions of the Öreg-Bakony (the central and highest part of the Bakony Mountains) accurately portray quondam and irreplaceable customs of the Bakony Mountains. These customs included hogs foraging for acorns, other livestock grazing in the forests, use of tree foliage as fodder or collecting dead fallen leaves, and were everyday practices even in the 19th century. Some geographical names of the area refer to wood-based industries, strengthening their importance in the area.

Introduction

Historical forest and land use in the Hungarian past was more diversified than one would imagine. Through the intensification of agriculture and forest management, many of these details have disappeared. The past can now only be reconstructed from written descriptions, historical references and through the stories of elder inhabitants.

A field, pasture or forest is not only a mass of soil, plants and animals, they are also part of a history. Even the landscape is a segment of happenings in time. This being so, research is unimaginable without the inclusion of the historical perspectives. Historically there were three basic vegetation types in the Carpathian basin. These types were treeless areas, wood steppes and closed forests (BARTHA 2003). Human cultures settled on the treeless and wood steppe areas first. As the population of each ethnic group expanded, so did the need for more and more arable land, making the deforestation and transformation of closed forests an essential part of life. The settlements and memories of these transformation procedures have remained in traditional forest use, pasture management and agriculture. The examples of wood pastures and grazed forests are very poignant; they are the last models of a vanishing management system called clearing farming.

The habitat transformation is still taking place as humans change their environment all the time, but the knowledge of past and present could be helpful in making conclusions for the future. Historical research is necessary in the case of each landscape element, furthermore, we cannot afford to lose the culturally rich memories of traditional land and forest use of the so-called “Bakony woodland.” In the past, this quondam woodland extended from the Rába to the Dráva Rivers (RÓMER 1860). László Breuer was one of the greatest influences on researching the Öreg-Bakony Mountain’s land and forest use

history. He organised a variety of studies on its landscape values (KISZEL and MALATINSZKY 2007). In following Breuer's aims, this study will examine the particulars of the Bakony Mountains and the larger specifics of the Öreg-Bakony Mountain's landscape history.

Material and methods

The studied area is the Northern or Öreg (Old) Bakony Mountains microregion, situated in Hungary, in the Transdanubian Mountain Range macroregion's Bakony mesoregion, and includes also the Small Basins of Bakony microregion. The mentioned 2 microregions contain altogether 36 villages or settlements, representing the Bakony Mountains and its management or farming traditions (MAROSI and SOMOGYI 1990) (Figure 1).

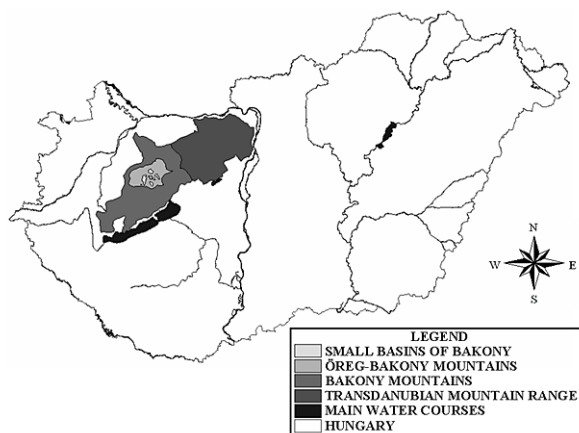


Figure 1. Location of the studied area
1. ábra A vizsgált terület elhelyezkedése

The traditional forest use (grazing in forests, secondary use of forests, development and declining of wood pastures and grazed forests) was examined in the Bakony Mountains from the 9th to the 19th century by using various data of different branches of natural and social sciences. Abiding to the aims, the Results and discussion chapter is basically a summary of diverse ethnographical, historically geographical, agricultural history and forestry history data from scientific publications with a complex viewpoint. In this chapter reference books and publications are briefly described.

Reconstruction of traditional forest and land use was possible only from literature review and the stories of elder inhabitants. The literature search began 4 years ago and is still in the process, resulting in unfinished research, however, the quantity of collected data allows for a first conclusion.

Much of the data obtained was from the publications of FÉNYES (1847) and RÓMER (1860). Changes in the vegetation and the extent of destroyed woodlands in the transformation processes were observed in the publication of WALLNER (1942). Through the publications of HEGYI (1978) and TAKÁCS (1976, 1980) the quondam traditional forest use became apparent, as well as deforestation and local specialities of Öreg-Bakony Mountains. The particulars of forest use have become clearer through the help of the

Magyar Erdészeti Oklevéltár (TAGÁNYI 1986) (Record Collection of Hungarian Forestry), the *Erdészettörténeti Közlemények* (Reviews on Forestry-History) the publications of OROSZI (1995, 2005) and PETERCSÁK (1992, 2003). The publications of HEGYI (1978), VAJKAI (1959) and MÉSZÁROS (n.d.) also gave basic knowledge on quondam livestock keeping, forestry and agricultural methods and habits of Öreg-Bakony Mountains and its villages.

In the elaboration of historical data, a basic picture was developed and cemented by the documents of the Veszprém County Archives. The archives were systematically revised, and some photographs were made. Although the archives are incomplete, with the help of Archive's documents from 19th century, the reconstruction of quondam managing habits was successful.

A significant part of the research area had historically belonged to Szentgál (the village itself not being part of this microregion), and because of this the monographs of Szentgál and Pénzesgyőr villages (VAJKAI 1959, HUDI 1998) were also reviewed. To achieve the complete view, many of the Archive's documents were used, but only the VCA XXI. 103. 306/1 is relevant in this particular study.

Some of the historical land use types were used just 30 years ago, which enabled recorded interviews (with 2 inhabitants) to be completed.

Results and discussion

After the Hungarian conquest of the Carpathian Basin in the late 9th century, the forests there were used by the settled communities at no cost. Royal wooded properties had been established from the commonly used forests and were called 'wood provinces.' The wood provinces were largely extended, private properties with their own local government in the Árpád-Ages (i.e. between the 11th and 14th centuries). During that time some of them were developed into royal counties, while others dissolved into the adjacent counties after being given to proprietors as was the case with the quondam wood province of Bakony (HEGYI 1978).

The primary use of forests in the Bakony's woodlands was for the acquiring of food, i.e. hunting in the 10th century. The cutting of wood was at that time unsystematic, however the need for wood began to grow as the volume of glass manufacturing, mining, metallurgy and other wood-based industries started to thrive. Hunting was important but only after grazing, acorn foraging and other uses (PETERCSÁK 1992).

The trees of the forests have been protected since the times of King St. Stephen. Evidence for this is the word *ardó* in the geographic names since the 11th Century like the nearby Ardó settlement close to Döbrönte village. *Ardó* comes from the contraction of *erdő* (forest) and *óvó* meaning (protector). The protectors kept the forests safe and managed the woodlands; "they occupied high position among royal functionaries" (PESTY 1880). Their work was mainly necessary in the Bakony Mountains where every usable area was cultivated. When observing the environmental facts and farming traditions, the conclusion is that huge amounts of livestock needed an equally huge amount of forage, of which came from the forests. Therefore the connected secondary uses have come to be first. For example, the feeding of foliage was widely used. The predominant species used for forage feeding were the ash species (*Fraxinus* spp.); They were subsequently found in numerous geographical names of the research area, like Kőrös (Ash) Mountain.

Closed forests were more or less used for grazing, acorn forage, cutting tree foliage for fodder, and collecting dead fallen leaves in the traditional system. However, after the dividing of the easily cultivated fields, the crucial need for more arable land drove the population to deforest the woodlands. The first phase in the transformation of the sometimes thick and impenetrable forests was the so-called occupation, before the real clearing work. There were several types of clearing work, depending on the geographical situation and habits of the settled population. The easiest way was the burning of forests; however, this was the most dangerous possibility, and was then forbidden since the early times in Hungary. Exceptions were made for the forest workers, who made smaller fires for everyday use (cooking and heating), and burning harmful shrubs and poisonous plants on pastures was also allowed (HEGYI 1978). During the process of clearing or forming of wood pastures and grazed forests, the vegetation was often grazed first to utilize the shoots and foliage. After grazing, the destroyed forest was transformed to useable fields. This clearing was tedious, and workers were often motivated by concessions, for example the clearers could keep the logs and the harvest of 1–3 years from the cleared field or later the half of the yield (PETERCSÁK 1992).

De-stumping of trees was one of the most problematic portions of the work, as was the removal of prickly shrubs. Shrubs were cleared “with fire and iron” and grazing, so the settlers could use the fields (MÉSZÁROS n.d). There were three basic methods for de-stumping in Transdanubia. The first was completed when the trees were cut down; the roots were cut out or not, depending from the hardness of work. The second was the so-called stubbing overthrow, when roots were dug around (without cutting the tree) and were overthrown with the help of the tree’s own weight. The third method was drying (so-called ringing in the forestry terminology) when the outer bark was cut around, and the trees dried out. Sometimes trees were just hit or pat around the trunk in order to damage tufts. In the ancient times people simply excised trees, and started cultivating the field among the stumps (TAKÁCS 1976, 1980). These data demonstrate the wide knowledge of ancient people about nature, forests, trees and other plants. The marks of drying, clearing and other activities can be found in geographical names, like *aszó*, *irtvány* or *csonkás* (TAKÁCS 1976, 1980).

Grazing livestock helped a lot during clearing, as fresh shoots and leaves could be perfectly utilized as forage. Tree species of the research area (except for beech) shoot well from logs, so their shoots could be grazed by animals. Although during the regeneration of forests – in young forests and in forests being in the regeneration phase – grazing (especially grazing goats and hogs) was forbidden (TAGÁNYI 1896). Cattle, hog and sheep were the most important species in the Hungarian livestock keeping and grazing customs. Forests were important sources of forage, especially in those areas where the proportion of open grasslands was low (e.g. in the Bakony Mountains). The importance of grazing in forests could be demonstrated by the fact that sheep farming ceased in the Börzsöny Mountains due to the ban on grazing in forests (PETERCSÁK 1992). Grazing needed to be regulated from the early times, because some of the species grazed without being fastidious, and sometimes shepherds made damages in the trees (OROSZI 1995, 2005). One of the most favourite foods of grazing animals were fresh shoots with leaves and buds, therefore sometimes animals were drove into the forbidden parts of the regenerating forests to graze young saplings. In addition, shoots situated in the foliage of trees were also regularly cut and given to animals. These abuses later generated severe disputes.

The importance of grazing in forests is clear, on the other hand we should not forget the importance of forest meadows in some parts of Hungary, based on VIGA's (1986) researches (PETERCSÁK 1992). Yield and quality of grasses in forests is lower than in meadows. Regularly, the annual yield of forest grasses is only 200-400 kilograms from 0.58 hectare of forest, and even its forage value is low as well (it is equal to 100 kilograms of meadow grass) (BARTHA 2003). Thus, one could imagine the destruction of huge grazing livestock in forests.

Cutting the foliage of trees for feeding used to be a common practice. The most suitable species for foraging were ashes (*Fraxinus* spp.), lime trees (*Tilia* spp.), willows (*Salix* spp.), maples (*Acer* spp.), poplars (*Populus* spp.), black locust (*Robinia pseudo-acacia*), mulberry (*Morus alba*), oaks (*Quercus* spp.) and hornbeam (*Carpinus betulus*). Sticks thinner than one inch were cut back to one third of the foliage (possibly in June), they were binded into sheaves and were dried. Withered sprouts were collected with carts, and were transported into stacks or haylofts for winter storage (FÖLDES 1895). This way livestock could be fed with green forage during winter even in years with very cold weather. Cutting sticks from trees causes severe damage to them every time, therefore it became forbidden quite early. It was allowed only in necessity, for example in 1863 when Hungary suffered from a severe drought. 125 kilograms of foliage fodder is equal to 100 kilograms of medium quality hay from meadows according to historical experience (BARTHA 2003).

As a base of forage for livestock, forests played their most important role in hogs foraging for acorns. Forests producing high amount of acorns were considered of high value, for example in 1514 their price was estimated in 50 Marks in Werbőczy's *Tripartitum* (book of laws) (PALÁDI-KOVÁCS 2001) as the most valuable ones in parallel with the oldest forests giving wood for construction. These two types of forests were counted 16 times more expensive than any other types of forests. Beech nut and oak acorn had got big importance in sheep farming as well. Acorn yield of 0.58 hectare of forest was 200-400 kilograms in beech forests and 300-500 kilograms in oak forests, so fattening one hog needed 2.3-2.9 hectares forest (BARTHA 2003). This fact is startling if we count with the data of FÉNYES (1847): 150,000 hogs during one year in the Bakony Mountains. Besides hunting, the oldest post for the nobles of Szentgál was the livestock keeping in forests. They leased the beech nut yield of their beech woods for several hundreds of Forints still in 1842 (HUDI 1998).

Further secondary forest use in connection with livestock keeping was the collection of fallen leaves for bedding. This type of use caused huge damage in the forests similar to the cutting of shoots in the foliage. During the collection for bedding, dry fallen leaves and parched grasses were raked together and carried away from the bottom of forests. This activity stopped the supplying nutritive and organic matters of soil, so this type of forest use was forbidden in most of the forests of the research area, referred to by the idea of "The constant farming plant of János Hudi and Co." (VCA). But not only these uses damaged the forests and their soils (DEMÉNY K., CENTERI Cs. 2008; PODMANICZKY et al. 2009), but the turning up and treading down of soil by the numerous animal have to be mentioned as well.

Besides grazing in the forests, other land use types played significant role in traditional livestock keeping, such as grazing forests and wood pastures. They were really characteristic and widespread. In the research area, the wood pasture between Pénzesgyőr

and Hárskút was observed by MALATINSZKY et al. (2004), KENÉZ et al. (2006), KENÉZ (2008) and SZABÓ (2008), and the one close to Olaszfalu by VARGA (2008).

There were no pastures without trees until the mid-18th century in the Bakony Mountains (HEGYI 1978). Between the mid-19th and mid-20th century, grazed areas were kept in exempt condition from brushes and weeds by the owners of common pastures, who have made the so called pasture clearing every spring, together with the youth of villages PETERCSÁK (2003). During our collection of data, this activity was strengthened for the Öreg-Bakony Mountains by Károly Pacher's report: "these peasant men were prepared for this work; they were had to do it every spring. The pasture was theirs; their livestock went out there, so they had cleared the pasture" (PACHER ex verb.). Mainly the mattock, the sickle and the thorncutters were pointed out by the interviewed persons as the tools of clearing (LIEBISCH ex verb.). Finally, pasture clearing is not less than the last practicing memory of Hungarian clearing farming, because the most archaic methods and tools were used during the cutting out of harmful plants. In some Hungarian regions, this work was done by the employed sheperds in the 19th century (GALGÓCZI 1884).

Besides livestock keeping, industries based on wood as raw material or fuel severely charged the woodlands as well. Although the domestic industry was also significant in the region, for example settlers of Pénteskút or Bakonybél had a reputation of being good wood-carvers all the time, hereby only lime burning, charcoal burning, pearlash making and glass manufactory will be discussed.

The lime was really important booth for everyday life as well as for industries, to such an extent that the poorest people had bought even the lime powder remained after lime burning: Before starting of burning, the poorer ones went out to the lime-klns to agree with the burners to exchange the quick lime powder to a bottle of vine or spirit. HEGYI (1978) gives a detailed and accurate report on the lime burning in the Bakony Mountains. The contractor or the domain of lime burning transported the locally mined, exploited or collected limestone to the lime-klin usually on their own cost. The bigger part of the klin's combustion space were sunken into the ground and its wall was built from cinder or adobe. Usually 200-400 kilograms of limestone was used for one burning. Bigger rocks were heaped around to a dome or cupola, and the gaps were filled with smaller ones. A klin was stoked from the inside for 3 or 4 days with one meter long billets of wood. The most suitable species were Turkey oak, sessile oak and beech for this work. Produce of 100 kilograms quick lime needed 200 kilograms limestone and 1.3 cubic metres wood. The temperature of burning was at least 900 °C to the complete burning (HEGYI 1978), so one could imagine the huge claim for wood.

The charcoal burning was a typical activity in the whole area of the Bakony Mountains. It provided the other important basic material for the households and industry over the lime burning. This industry was run in the whole Bakony Mountains, as referred to by the balkname *Szénégető-dűlő* (Charcoal-burner), close to Szentgál village. The locally cutted beech trees were put into piles on flat ground possibly, especially on the places of previous burnings. The pile was a half orb with an average diameter of 10 meters. Making of a cone started with the sticking of a 'bull' (a 2.5 meters long wood branch with a fork on the top). 4-6 pieces of 60-120 centimeters long stakes were stuck around the bull, about 15 cm distances from each other. Dry twigs and thicker billets were put around this tent-shape and finally thinner branches were put onto the outer surface. 10-12 cartloads wood was used for the bigger cones. For heating charcoal, charred armthick branches were used,

while for fine charcoal (for example for gunpowder), thinner twigs only. After this, the cone was covered with mixture of soil and dead fallen leaves (best case mixed with the powder of previous burning). The bull was pulled out to form a firing hole. Glowing embers were put into the hole to make fire. When the smoke disappeared (meant that the burning started), the firing hole was filled with wood and charcoal. Burning of a 20 cubic meters large cone lasted for 6 to 7 days. Burners constantly had to follow this process with attention. The sides of the cone were aligned and covered again if necessary. In favour of the carbonization process, vent-holes were opened from the top to the bottom step by step. After tumbling down and cooling, the cone was disintegrated and the charcoal was separated into heaps and sold for charcoal traders (VAJKAI 1959).

The most considerable local profession in the Öreg-Bakony Mountains was the pearlash-making. Most important component of pearlash is the potassium carbonate that was prepared traditionally by washing wood ash in lye. The alkalin gained this way was primarily used for glass production, whitening, tanning and saltpetre production. Hungarian pearlash was got into the international trade as early as in the 14th century (MÉSZÁROS n.d.).

Pearlash was produced in the traditional way (as described above) at industrial amounts between the mid-18th Century and the early 19th Century. The need for such a huge amount of woodash resulted in the decay of 2.3 million hectare of forests in the Hungarian Kingdom during a few decades. In 1756, 600 tons of pearlash was produced in 41 kilns in Veszprém County, that means in the Bakony Mountains (ECKHART 1922). The export of pearlash exceeded a massive 3686 tons at the level of Hungary in 1864, due to the growing demand in Western Europe, where the forests were already cutted out and besides, the price of wood was significantly low in Hungary. Hungarian pearlash was considered as carrying a high value, therefore the English glassworks and the Czech glass and textile industry exported it in limitless amounts (MÉSZÁROS n.d.). By the spread of Russian and American pearlash, and the artificially produced sodium carbonate, this industry sunk into the level of secondary industries.

The production of pearlash can be divided into 4 phases according to the traditions of Bakony Mountains: making ash of wood, washing ash of wood, evaporizing of alkali and the calcinating (i.e. burning) of raw pearlash (MÉSZÁROS n.d.). The easiest way of making ash of wood was to put a glowing tinder into a hollow of a tree and wait until the tree burns out from the inside. That was not a safe method, as a whole forest could have burned in case of drought or the ash could have soaked from the rains, and only a sackful ash could have been made even from a large tree by this way. Burning above a stone-lined pit (foundry) and collecting the ash from the pit was a safer method. Workers were the poorer settlers in the Öreg-Bakony Mountains (VAJKAI 1959). The largest amount of pearlash could be produced from raw foliage, bark, young proungs and branches of leafy trees. Burning had to be a slow process in favour of the high potassium content of the ash, therefore the wood was sprinkled with water. After the collection of ash, the second phase was that: "...ash was washed, the alkalin was evaporized and the remained brown alkalic mass was calcinated in keils, or previously in kettles, meanwhile this procedure the contaminating organic components were buried out" (ECKHART 1922).

There was a claim for large quantities of wood by pearlash workshops: "Based on beech wood, 1.45 units of pearlash could be produced from 1000 units of wood, and only 0.45 units of ash from 1000 units of pine-wood" (ECKHART 1922). A remained historical

evidence for pearlash making is the geographical name *Hamuházi-dűlő* (Ash-house balk) on the right side of the road between Akli and Pénzesgyőr villages, referring to an ash-house working as early as in 1782 according to the documents (HUDI 1998). If we look at the locally produced quick-lime, charcoal and pearlash, a picture of a new craft is taking shape: the glass production, having high importance in the Öreg-Bakony Mountains.

Glass, which had already been known by the early Hungarians at the time of their Conquest, was produced in glass-houses. Glass production has grown from the Middle Ages and the number of glass-houses has grown in the 17th Century, when the glass has become part of an everyday peasant household. Glass was made from locally found sand or pebbles with high silicium dioxide content, limestone and pearlash by fusing and coloured with metal oxides (at first by chance and later consciously). Glass production was possible only in the vicinity of sand mines or high silicium dioxide containing rock formations, such as the Csátka pebble formation. The locally well-known glass-house was on the Som Mount. Its products were kept as family heirloom from generation to generation. The *huta* and *hütte* (glass-house) words in old geographical names prove evidence for the importance of this old craft in the area. One of the geographical names, *Óbánya* (Oldmine or Old glass-house in this meaning) marks an establishment on the map of the 1st Military Survey of Hungary (1763–1768). It was shut down in 1791 as the local forests were ruined, and a new glass-house named *Újbánya* (Newmine or New glass-house in this meaning) (*Nova Huta* in some of the documents and maps) was established near Pénzeskút-puszta (now part of Pénzesgyőr village). Ten thousands of glassware (glasses, bottles, window glasses and medicine bottles) were produced here. It is in connection with the fact that workers of the glass-house were the majority of the local population (over the farmstead cotters and domanial servants) in the 19th century (HUDI 1998). The glass-blowers of *Újbánya* were moved to Somhegy settlement in the first quarter of the 19th century where the well-known glass-house of Som Mount has already producing and its production was constant until 1859 (WALLNER 1942).

Looking at the past it can be stated that the historical management forms cannot be mentioned as being simple and not considered to oblivion. This diversity has disappeared from the modern management; moreover, it is a necessity of the technical and technological development, but with the decreasing of diversity (agro- or agrobiodiversity) these management-historical memories will probably disappear as well.

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Reports of local inhabitants:

- LIEBISCH ex verb.: Katalin Liebisch, 80 years old inhabitant in Pénzesgyőr
- PACHER ex verb.: Károly Pacher, 70 years old inhabitant in Pénzesgyőr

TÉNYEK AZ ÖREG-BAKONY TÁJTÖRTÉNETÉHEZ

SALÁTA Dénes, PENKSZA Károly, MALATINSZKY Ákos, KENÉZ Árpád

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2103 Gödöllő, Péter K. u. 1., e-mail: Salata.Denes@kti.szie.hu**Kulcsszavak:** Bakony hegység, tájtörténet, állattartás az erdőben, erdőhasználat

Hajdani határhasználatunk és az egykori táj a mainál jóval színesebb és diverzebb volt. Egy adott terület tájtörténetének kutatása során tárulnak fel előttünk azok a folyamatok és hatások, amelyek eredményeként a mai állapot létrejött. Nincs ez másképpen a Kárpát-medencét egykor borító kiterjedt, zárt erdőségekkel sem. Az élőhely-átalakítás során jelentős mértékben visszaszorultak az erdők, megváltozott használatuk, így habitusuk is. Hazánk egyik legnagyobb zárt erdőtömbje a Bakony, amelynek kiterjedése jelentős mértékben csökkent az elmúlt 500–1000 évben, és amelynek mező- és erdőgazdálkodási hagyományai lassan eltűnnek a termelés intenzívvé, illetve belterjessé válásával. Az Öreg- vagy Magas-Bakony hagyományai hűen reprezentálják az egykori Bakony szokásait. A makkoltatás, az erdők legeltetése, a fák lombjának felhasználása takarmányozásra, vagy akár az erdei avar gyűjtése mindennapos volt még a XIX. századi állattartásban is. Az egyes, a fára, mint nyers- és fűtőanyagra épülő iparágakról pedig a vizsgált terület földrajzi helynévi anyaga tanúskodik.